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D. P. JOSEPH

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MEANS FOR MOUNTING RADIO ANTENNAE ON VEHICLES AND THE LIKE

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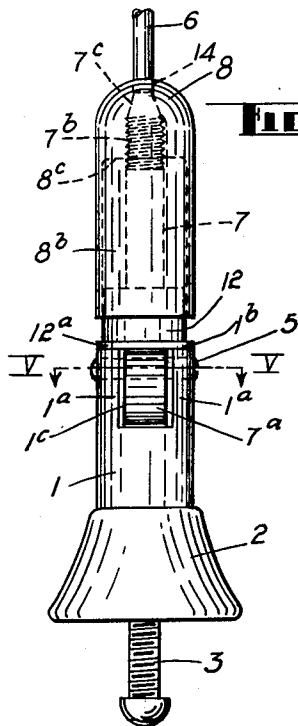


FIG. 1

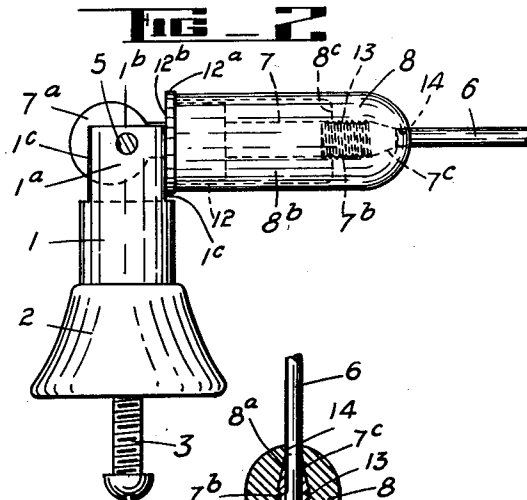


FIG. 2

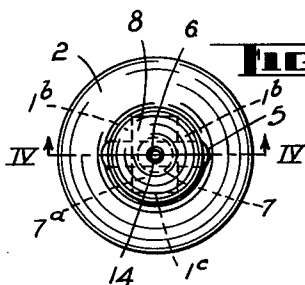


FIG. 3

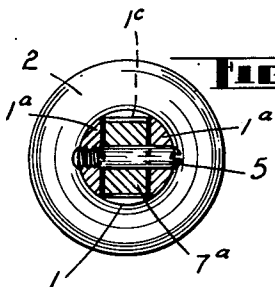


FIG. 5

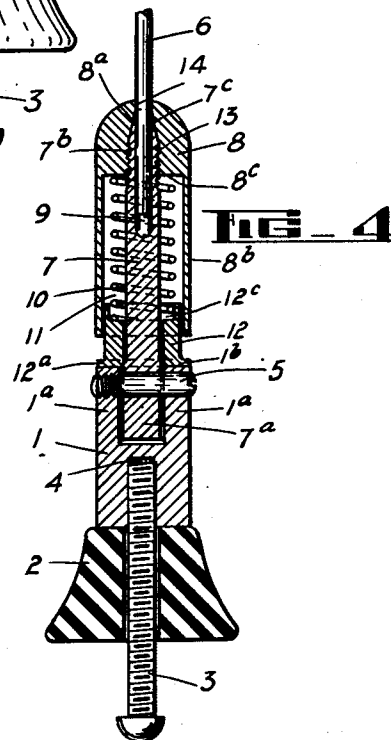


FIG. 4

INVENTOR
DAVID PETER JOSEPH
By *Haseltine, Lake & Co.*
AGENTS

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MEANS FOR MOUNTING RADIO ANTENNAE ON VEHICLES AND THE LIKE

David Peter Joseph, Mount Eden, Auckland,
New Zealand

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6 Claims. (Cl. 248—160)

This invention relates to improvements in means for mounting radio antennae on vehicles and the like, and in particular it relates to means whereby a radio antenna of the rod or telescopic tubular type may be pivotally mounted on a motor vehicle.

The main object of the present invention is to provide means for pivotally mounting radio antennae of the above kind on vehicles and the like, so that the antenna, on striking an object overhanging the vehicle, such as a branch of a tree or a garage doorway, will pivot backwardly on its mounting under the pressure of the object as the vehicle moves forward until the antenna reaches a sufficient inclination to enable it to pass under the said object, after which the antenna will automatically resume its normal upright position.

A further object of the invention is to provide means of the above kind for mounting radio antennae on vehicles, in which an antenna of the rod or telescopic tubular type may be securely held in the mounting and may be rapidly fitted therein and removed therefrom.

A still further object of the invention is to provide means of the above kind for mounting radio antenna on vehicles by which an antenna may be mounted in a normally vertical position, or may be swung down and locked in horizontal position when desired.

According to the invention, the means for pivotally mounting a radio antenna on a vehicle consists of a yoke member having arms and adapted to be mounted on and electrically insulated from the vehicle, a gripping portion pivoted to the yoke member and adapted to receive and grip an end of the antenna, a sleeve slidable on the gripping portion and having an end surface adapted to bear against corresponding surfaces of the yoke member and a spring arranged to exert pressure between the gripping portion and the sleeve, so as normally to maintain the gripping portion and the antenna in an upright position and to return the said gripping portion and antenna to an upright position following their displacement. Means may also be provided whereby the gripping portion and the antenna may be pivoted to and maintained in a horizontal position when desired.

One embodiment of the invention will be described with reference to the accompanying drawings in which:

Figure 1 is a front elevation of the device showing an antenna mounted therein.

Figure 2 is a side elevation of the device showing the antenna in a horizontal position.

Figure 3 is a plan of the device.

Figure 4 is a sectional elevation of the device on the line IV—IV of Figure 3.

Figure 5 is a section on the line V—V of Figure 1.

Referring now to the drawings, in means according to the invention for pivotally mounting radio antennae on vehicles a yoke member 1 is mounted on a block 2 of electrically insulating material and is adapted to be secured to the vehicle (not shown) by a screw 3 passing through a hole in a portion of the body of the vehicle and through a hole in the block 2 into a screw-threaded hole 4 in the base of the yoke member 1. The head of the screw is electrically insulated in any usual way from the body of the vehicle by means which are not shown in the drawings. The yoke member 1 consists of a block formed with two upwardly extending arms 1a having flat upper surfaces 1b and forming a yoke within which is pivoted an end of a gripping portion adapted to receive and grip an antenna 6 and consisting of a socket member 7 and a cap 8. The member 7 has a flattened disc shaped

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end 7a pivoted eccentrically on a pin 5 extending between the arms 1a of the yoke member and passing through the end 7a of the socket member 7. The other end of the socket member 7 is formed with a socket 9 adapted to receive the end of the antenna 6, the member 7 being externally screw-threaded at 7b at a portion adjacent to its socket end to receive the cap 8, which has an internally screw-threaded portion 13, for engagement with the threaded portion 7b of the member 7, and a hole 14 through which the antenna 6 projects. The socket member 7 is formed at its socket end with an externally tapered, slotted extremity 7c adapted to fit into a corresponding internally tapered portion 8a of the cap 8 to form a collet joint whereby the antenna 6 is held tightly in the socket 9.

The hole 14, the internally tapered portion 8a, and the internally threaded portion 13 of the cap 8 form a single central opening through the cap, in which the hole 14 is the upper and narrowest portion, the tapered portion 8a is the intermediate portion, and the threaded portion 13 is the widest and lowest portion of said opening.

The cap 8 has a tubular extension 8b and a base portion 8c, and the extension 8b lies around and along a portion of the length of the socket member 7, and is adapted to house a helical compression spring 10 extending around a portion of the socket member within a space 11 between the inner wall of the tubular extension 8b and the socket member 7. One end of the spring bears against the base portion 8c of the cap 8.

A sleeve 12 having an end flange 12a is slidably mounted on the body of the socket member 7, and the flange 12a has a flat end surface 12b adapted to bear against the flat upper surfaces 1b of the arms 1a of the yoke member. The end of the sleeve 12 remote from the flange 12a is formed with a socket portion 12c adapted to receive and seat the other end of the spring 10. The length of the spring 10 is such that in the upright position of the gripping portion 7c, the spring 10 is compressed between the base portion 8c of the cap and the socket portion 12c of the sleeve 12, to an extent sufficient to maintain the flat end surface 12b of the sleeve normally in full contact with the flat upper surfaces 1b of the arms of the yoke member.

When the pressure on the antenna is released, the antenna will resume its upright position under the pressure of the spring 10, acting between the base portion 8c of the cap 8 and the sleeve 12, to cause the socket member and the sleeve to pivot until the end surface 12b of the sleeve is again in full contact with the upper surfaces 1b of the arms of the yoke member. To facilitate this action the distance between the upper surfaces 1b of the yoke member and the pivot pin 5 is as small as possible. Each arm of the yoke member is formed with an outer flat side surface 1c against either of which side surfaces the flat end surface 12b of the sleeve may bear, to maintain the antenna in a horizontal position when the antenna and the socket member are pivoted in either direction on the pin 5 to assume a horizontal position, as shown in Figure 2. Pressure of the spring 10 between the base portion 8c of the cap 8 and the sleeve 12 will then retain the socket member and antenna in a horizontal position, by maintaining the end surface 12b of the sleeve in contact with either side surface 1c of the yoke member 1. The antenna 6 may be readily removed from and replaced in the socket 9 of the socket member 7 by partially unscrewing the cap 8 from said member 7 to loosen the pressure of the collet joint formed by the tapered portions 7c and 8a of the member 7 and cap 8 respectively. On replacement of the end of the antenna in the socket 9, the cap 8 is again screwed onto the socket member 7 to tighten said collet joint and hold the end of the antenna firmly in the socket 9.

It is to be understood that the invention is not limited to the details disclosed in the above described embodiment of the invention, but may be embodied in other forms lying within the nature of the invention.

The device described above provides a convenient and practical means for pivotally mounting a radio antenna on a vehicle, so that the antenna may be held in a normally vertical position, and is pivotable from that position under pressure and self-restorative thereto when the pres-

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sure is released, and is further capable of being pivoted so and locked in a horizontal position when desired.

What I claim and desire to obtain by Letters Patent of the United States of America is:

1. Means for pivotally mounting a radio antenna on a vehicle, comprising a yoke member having arms and adapted to be mounted on and electrically insulated from the vehicle, a gripping portion pivoted on the yoke member and adapted to receive and grip an end of the antenna, a sleeve slidable on the gripping portion and having an end surface adapted to bear against corresponding surfaces on the yoke member, and a spring arranged to exert pressure between the gripping portion and the sleeve so as normally to maintain the gripping portion and the antenna in an upright position and to return said gripping portion and antenna to an upright position following their displacement.

2. Means for pivotally mounting a radio antenna on a vehicle, as claimed in claim 1, in which the gripping portion consists of a socket member pivoted at one end to the yoke member and formed at the other end with a socket adapted to receive an end of the antenna, said socket member being externally screw-threaded adjacent to its socket end to receive a cap having an internally screw-threaded portion and a hole through which the antenna is adapted to project, and said socket end being externally tapered and slotted to fit within a correspondingly internally tapered portion of the cap to form a collet joint adapted to hold said end of the antenna in said socket.

3. Means for pivotally mounting a radio antenna on a vehicle, as claimed in claim 2, in which the cap has a base portion and a tubular extension, and in which said extension lies around and along a portion of the length of the socket member and towards the pivoted end of said member, and is adapted to house a helical compression spring bearing at one end against said base portion and extending around a portion of the body of the socket member between the inner wall of the tubular extension and the body of the socket member.

4. Means for pivotally mounting a radio antenna on a vehicle, as claimed in claim 1, in which the sleeve has an end flange with a flat end surface adapted to bear against

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flat surfaces of the arms of the yoke member, and is formed at its end remote from the flange with a socket portion adapted to receive and seat an end of the spring.

5. Means for pivotally mounting a radio antenna on a vehicle, as claimed in claim 2, in which the cap has a base portion and a tubular extension, said extension being adapted to house a helical compression spring extending around a portion of the body of the socket member, and in which the sleeve has a flat end surface adapted to bear against flat upper surfaces of the arms of the yoke member and is formed at its end remote from said flat end with a socket portion adapted to receive an end of the helical spring, said spring being arranged to be compressible between the base portion of the cap and the socket portion of the sleeve, and being of such a length that, in the upright position of the gripping portion and antenna, the spring is compressed to an extent sufficient to maintain the flat end surface of the sleeve normally in full contact with the flat upper surfaces of the arms of the yoke member, and to restore such contact following release of such pressure as may cause pivoting of the gripping portion and antenna relative to the yoke member.

6. Means for pivotally mounting a radio antenna on a vehicle, as claimed in claim 1, in which the sleeve has a flat end surface, and in which each arm of the yoke member is formed with an outer flat side surface against either of which surfaces the flat end surface of the sleeve may bear, each said side surface being adapted to cooperate with the flat end surface of the sleeve to maintain the antenna in a horizontal position, when the antenna and gripping portion are pivoted to a horizontal position in either direction in the plane in which the gripping portion is pivotable.

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